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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,633	07/31/2001	Shunpei Yamazaki	740756-2345	3382
22204 7590 02/23/2009 NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			EXAMINER TRAN, THIEN F	
			ART UNIT 2895	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/917,633

Applicant(s)

YAMAZAKI ET AL.

Examiner

Thien F. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4,6,7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4,6,7 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/04/01, 04/11/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Opening Comments

As provided in 37 CFR 1.198, prosecution of the proceeding before the primary examiner will not be reopened or reconsidered by the primary examiner after a final decision of the Board except under the provisions of 37 CFR 1.114 (request for continued examination) or 37 CFR 41.50 without the written authority of the Director, and then only for the consideration of matters not already adjudicated, sufficient cause being shown. As seen in the following rejections, the Director has determined that sufficient cause to reopen prosecution is merited as indicated by his/her signature below

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120, 121 as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the

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requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 09/848,307, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The limitations “a metal advanced lateral crystallization region”, “a plurality of metal advanced crystallization regions”, “the metal advanced lateral crystallization region includes no dopant portions formed on sides of the channel region”, and “at least one boundary between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions is located outside the channel region” in claim 4; “a metal advanced crystallization region”, “a metal advanced lateral crystallization region” and “a source region having a first source portion adjacent to the channel region and a second source portion adjacent to the first source portion” and “a drain region having a first drain portion adjacent to the channel region and a second drain portion adjacent to the first drain portion” in claims 6, 7 and 9 claim additional disclosure not presented in the prior application. These specific features are not disclosed and defined anywhere in the prior application that would permit one skilled in the art to immediately envisage the product as claimed. Accordingly, claims 2-4, 6, 7 and 9 are not entitled to the benefit of the prior application.

This application repeats a substantial portion of prior Application No. 09/848,307, filed 05/04/2001, and adds and claims additional disclosure not presented in the prior application. Since this application names an inventor or inventors named in the prior

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application, it may constitute a continuation-in-part of the prior application. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

Applicant states that this application is a continuation or divisional application of the prior-filed application. A continuation or divisional application cannot include new matter. Applicant is required to change the relationship (continuation or divisional application) to continuation-in-part because this application contains the following matter not disclosed in the prior-filed application: the limitations "a metal advanced lateral crystallization region", "a plurality of metal advanced crystallization regions", "the metal advanced lateral crystallization region includes no dopant portions formed on sides of the channel region" and "at least one boundary between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions is located outside the channel region" in claim 4; "a metal advanced crystallization region", "a metal advanced lateral crystallization region", "a source region having a first source portion adjacent to the channel region and a second source portion adjacent to the first source portion" and "a drain region having a first drain portion adjacent to the channel region and a second drain portion adjacent to the first drain portion" in claims 6, 7 and 9.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claims 2-4, 6, 7 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claim limitations in claim 4 set forth a structure not supported by the original disclosure presented in the prior application. The claim requires essential or critical features which are not adequately described in the original disclosure. For example, consider the features "the metal advanced lateral crystallization region includes no dopant portions formed on sides of the channel region" and "at least one boundary between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions is located outside the channel region". The features are new additional disclosure not expressly disclosed and defined anywhere in the original specification presented in the prior application. There is insufficient description of this specific feature in the original specification that would permit one skilled in the art to immediately envisage the product as claimed. The disclosure as originally filed lacked some standard for determining and understanding what applicant intended to cover. It is clear that the specification as originally filed do not meet the written description requirement under 35 USC 112, first paragraph that it has to clearly convey the information that an applicant has invented the subject matter which is now claimed. The examiner finds that there is no clear support for the languages (terms) used in the claims so that the meaning of the terms in the claims may be ascertainable by reference

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to the description. In fact, the meets and bound of the features mentioned above is undetermined and undefined by the specification as originally filed. It is well known in the art that the channel region is lightly doped of an opposite conductivity type with the source and drain region (impurity regions 16A, 16B) in order to isolate the source and drain regions from each other. The examiner finds no support in the specification of the prior application for the element "no dopant portions in the channel regions". It is noted that the offset region between the arrows in Fig. 1B is a part of a channel and probably lightly doped as known in the art. Since the specification is silent about the dopant concentration in the offset region, one could not assume it is undoped because it might be lightly doped as it is known in the art to isolate source and drain regions from each other. Page 7, lines 15-16 and Figs. 1B, 3B and 3C as pointed out by applicant do not expressly disclose that the offset region between the arrows is undoped as claimed. The limitation "at least one boundary between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions is located outside the channel region" in claim 4 is not supported by the specification. Page 9, lines 15-19 in the specification discloses the boundary in the middle as shown in Fig. 2B which is located outside the channel region but the boundary is formed in the middle of the metal advanced lateral crystallization region. In other words, the boundary at the center in Fig. 2B is not between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions (regions under 27A, 27B) as claimed. With respect to Fig. 1B, the crystal growth advances from both ends (17A, 17B) of the island semiconductor region (12) and finishes around the middle of the island region. As a

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result, the boundary at the middle is located inside the channel region, not outside the channel region as claimed. Thus, Fig. 1B does not support claim 4 as well as claims 2-3 that depend on claim 4.

The claim limitations in claims 6, 7 and 9 set forth a structure not supported by the original disclosure presented in the prior application. The claims require essential or critical features which are not adequately described in the original disclosure. For example, consider the features "a source region having a first source portion adjacent to the channel region and a second source portion adjacent to the first source portion" and "a drain region having a first drain portion adjacent to the channel region and a second drain portion adjacent to the first drain portion". These features are new additional disclosure not expressly disclosed and defined anywhere in the original specification presented in the prior application. There is insufficient description of these specific features in the original specification that would permit one skilled in the art to immediately envisage the product as claimed. The disclosure as originally filed lacked some standard for determining and understanding what applicant intended to cover. It is clear that the specification as originally filed do not meet the written description requirement under 35 USC 112, first paragraph that it has to clearly convey the information that an applicant has invented the subject matter which is now claimed. The specification does not provide a standard for determining what is encompassed by "first source portion", what is encompassed by "second source portion", what is encompassed by "a first drain portion", and what is encompassed by "a second drain portion", etc. so one of ordinary skill in the art would reasonably derive a proper

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understanding of the scope and content of the claims. The examiner finds that there is no clear support for the languages (terms) used in the claims so that the meaning of the terms in the claims may be ascertainable by reference to the description. In fact, the meets and bound of the features mentioned above is undetermined and undefined by the specification as originally filed. Page 9, lines 15-19 and Fig. 2B as pointed out by applicant do not expressly disclose a transistor comprising a first source portion, a second source portion, a first drain portion and a second drain portion as claimed. Indeed, Fig. 2B shows two transistors wherein the first transistor on the left comprises one impurity region (26A) considered as a source region and another impurity region (26A) considered as a drain and the second transistor on the right comprises one impurity region (26B) as a source region and another impurity region (26B) as a drain region. The examiner does not see a transistor comprising a source region having a first source portion and a second source portion and a drain region having a first drain portion and a second drain portion as claimed.

Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure does not provide the ordinary skill artisan with a reasonable expectation of success in creating or carrying out the claimed subject matter, since it does not provide any guidance as to how to form the metal advanced crystallization region including impurity doped regions formed on sides of the channel region as claim in claim

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2 and also to form the metal advanced lateral crystallization region including no dopant portions on sides of the channel region as claimed in claim 4. Without this disclosure, one of ordinary skill cannot practice the invention without undue experimentation because of the number of operational parameters in the process. The recitation of the metal advanced lateral crystallization region including impurity doped regions formed on sides of the channel region in the dependent claim 2 appears to contradict with the limitation "the metal advanced lateral crystallization regions includes no dopant portions formed on sides of the channel region" in the independent claim 4.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites "the metal advanced lateral crystallization regions includes no dopant portions formed on sides of the channel region" appears to contradict with claim 2 that recites "the metal advanced lateral crystallization regions includes impurity doped regions formed on sides of the channel region". The conflicting limitations in claim 2 and claim 4 create confusion and unclear. Thus, claim 2 is indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2-4, 6, 7 and 9, insofar as in compliance with 35 USC 112, are rejected under 35 U.S.C. 102(b) as being anticipated by Joo et al. (US 6,097,037).

Regarding claim 4, Joo et al discloses a transistor (Figs. 5D) comprising: a metal advanced lateral crystallization region (58) formed on a substrate (50) with a semiconductor material and including a channel region (51C); and a plurality of metal advanced crystallization regions (57) formed on sides of the metal advanced lateral crystallization region (58) with a semiconductor material, wherein at least one boundary between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions is located outside the channel region, wherein the metal advanced lateral crystallization region (58) includes no dopant portions (peripheral portions of channel region 51C considered as no dopant portions) formed on sides of the channel region.

Regarding claim 2, the metal advanced lateral crystallization region (58) includes impurity doped regions (56) formed on sides of the channel region.

Regarding claim 3, the metal advanced lateral crystallization region (58) includes source and drain regions (51S, 51D).

Regarding claim 6, Joo et al discloses a transistor (Fig. 4D) comprising: a channel region (41C); a source region having a first source portion (41L) adjacent to the channel region and a second source portion (41S) adjacent to the first source portion, said second source portion comprising a metal advanced crystallization region (47); and a drain region having a first drain portion (41L) adjacent to the channel region and a

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second drain portion (41D) adjacent to the first drain portion, wherein the channel region and at least one of the first source portion and the first drain portion comprise a metal advanced lateral crystallization region (48).

Regarding claim 7, Joo et al discloses a transistor (Fig. 4D) comprising: a channel region (41C); a source region having a first source portion (41L) adjacent to the channel region and a second source portion (41S) adjacent to the first source portion; and a drain region having a first drain portion (41L) adjacent to the channel region and a second drain portion (41D) adjacent to the first drain portion, said second drain portion comprising a metal advanced crystallization region (47), wherein the channel region and at least one of the first source portion and the first drain portion comprise a metal advanced lateral crystallization region (48).

Regarding claim 9, Joo et al discloses a transistor (Fig. 4D) comprising: a channel region (41C); a source region having a first source portion (41L) adjacent to the channel region and a second source portion (41S) adjacent to the first source portion; and a drain region having a first drain portion (41L) adjacent to the channel region and a second drain portion (41D) adjacent to the first drain portion, wherein the channel region (41C) and at least one of the first source portion (41L) and the first drain portion (41L) comprise a metal advanced lateral crystallization region (48), and wherein the channel region, the first source portion and the first drain portion comprise the metal advanced lateral crystallization region (48), the second source region (41S) comprises a metal advanced crystallization region (47), and the second drain region (41D) comprises a metal advanced crystallization region (47).

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Claims 2-4, 6, 7 and 9, insofar as in compliance with 35 USC 112, are rejected under 35 U.S.C. 102(b) as being anticipated by Hideaki Oka (JP 02-140915).

Regarding claim 4, Oka discloses a transistor (Figures 1a-d) comprising: a portion of a crystallization semiconductor layer (105) on a substrate (101), under the gate electrode (106) and between the source/drain regions (107) characterized as a metal advanced lateral crystallization region and a channel region, source/drain regions (107) of semiconductor material characterized as a plurality of metal advanced crystallization regions that is formed on sides of the metal advanced lateral crystallization region, wherein at least one boundary (boundary 105' at the center of the layer 105 in Fig. 1c) is located outside the channel region (Fig. 1d). The limitation "at least one boundary between the metal advanced lateral crystallization region and one of the metal advanced crystallization regions" is not considered for lack of support in the disclosure and is rejected under 112, 1st paragraph. Oka further discloses that the metal advanced lateral crystallization region (channel region) includes no dopant portions (peripheral portions of the channel region).

The claim limitations "metal advanced lateral crystallization region" in claims 2-4 and "a plurality of metal advanced crystallization regions" in claim 4 are taken to be product by process limitations. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product

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"gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not. In the final product, the metal advanced crystallization region and the metal advanced lateral crystallization region are crystallization regions having the same characteristics that are not patentably distinguished from each other.

Regarding claim 2, the metal advanced lateral crystallization region (105) includes impurity doped regions (107) formed on sides of the channel region.

Regarding claim 3, the metal advanced lateral crystallization region (105) include source and drain regions (107).

Regarding claim 6, Oka discloses a transistor (Fig. 1d) comprising: a channel region (a portion of layer 105 under gate electrode 106); a source region having a first source portion (a portion of region 107 between gate electrode 106 and wiring 111) adjacent to the channel region and a second source portion (another portion of region 107 under wiring 111) adjacent to the first source portion, the second source portion comprising a metal advanced crystallization region (105); and a drain region having a first drain portion (a portion of region 107 between gate electrode 106 and wiring 111) adjacent to the channel region and a second drain portion (another portion of region 107 under wiring 111) adjacent to the first drain portion, wherein the channel region and at least one of the first source portion and the first drain portion comprise a metal advanced lateral crystallization region (105).

The claim limitations “a metal advanced” and “a metal advanced lateral” in claim 6 are taken to be product by process limitations. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps, which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. In the final product, the metal advanced crystallization region and the metal advanced lateral crystallization region are crystallization regions having the same characteristics that are not patentably distinguished from each other.

Regarding claim 7, Oka discloses a transistor (Fig. 1d) comprising: a channel region (a portion of layer 105 under gate electrode 106); a source region having a first source portion (a portion of region 107 between gate electrode 106 and wiring 111) adjacent to the channel region and a second source portion (another portion of region 107 under wiring 111) adjacent to the first source portion; and a drain region having a first drain portion (a portion of region 107 between gate electrode 106 and wiring 111) adjacent to the channel region and a second drain portion (another portion of region 107 under wiring 111) adjacent to the first drain portion, the second drain portion comprising a metal advanced crystallization region (105), wherein the channel region and at least

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one of the first source portion and the first drain portion comprise a metal advanced lateral crystallization region (105).

The claim limitations “a metal advanced” and “a metal advanced lateral” in claim 7 are taken to be product by process limitations. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps, which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. In the final product, the metal advanced crystallization region and the metal advanced lateral crystallization region are crystallization regions having the same characteristics that are not patentably distinguished from each other.

Regarding claim 9, Oka discloses a transistor (Fig. 1d) comprising: a channel region (a portion of layer 105 under gate electrode 106); a source region having a first source portion (a portion of region 107 between gate electrode 106 and wiring 111) adjacent to the channel region and a second source portion (another portion of region 107 under wiring 111) adjacent to the first source portion; and a drain region having a first drain portion (a portion of region 107 between gate electrode 106 and wiring 111) adjacent to the channel region and a second drain portion (another portion of region 107

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under wiring 111) adjacent to the first drain portion, wherein the channel region and at least one of the first source portion and the first drain portion comprise a metal advanced lateral crystallization region (105), and wherein the channel region, the first source portion and the first drain portion comprise the metal advanced lateral crystallization region (105), the second source region comprises a metal advanced crystallization region (105), and the second drain region comprises a metal advanced crystallization region (105).

The claim limitations "metal advanced" and "metal advanced lateral" in claim 9 are taken to be product by process limitations. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not. In the final product, the metal advanced crystallization region and the metal advanced lateral crystallization region are crystallization regions having the same characteristics that are not patentably distinguished from each other.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F. Tran whose telephone number is (571) 272-1665. The examiner can normally be reached on 7:30AM - 4:00PM Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew N. Richards can be reached on (571) 272-1736. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thien F Tran
Primary Examiner
Art Unit 2895

/Thien F Tran/
Primary Examiner, Art Unit 2895

/N. Drew Richards/
Supervisory Patent Examiner, Art Unit 2895

RE-OPEN APPROVAL

RICHARD K. SEIDEL
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